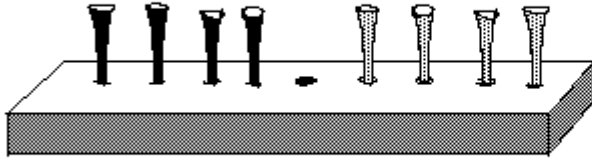


The Shuttle Puzzle

Consider the shuttle puzzle.



No. of pairs of pegs x	No. of moves to interchange the pegs y
1	
2	
3	
4	

The object of this puzzle is to interchange the blue and the red pegs (golf tees). The rules are 1) you can move to a hole that's next to a peg; 2) you can jump, but **only one** peg and it must be of the **other color**, and 3) you can't move backwards. You must start with the empty space in the middle and end that way. You can use golf tees as I do or two different kinds of coins or bottle caps or pieces of colored paper as the pieces. Try it. It's not easy.

If you have difficulty, try it with 2 on each side of the space in the middle. Then you can't use the 2 holes on the outside on each side. **Sometimes when a problem is hard, make up a simpler one, do that, then go to the harder one.**

When you can interchange 1, 2, 3 and 4 pairs, then make a table like the one shown above. Fill in the number of **pairs** of pegs and count the number of moves it takes to interchange the pegs. Put those numbers in the table. Then find a rule to relate x to y. Graph these pairs of numbers.

